

Amendments to the claims:

Claims 1-3 (canceled)

Claim 4 (currently amended): ~~The method of claim 3 further comprising:~~

A method for making a substrate for a mirror used in a photolithographic process for making a semiconductor device comprising:

polishing and cleaning a the first layer prior to forming the crystalline layer on the first layer which has a low coefficient of thermal expansion and that comprises a low CTE glass or a low CTE alloy that is selected from the group consisting of a titanium silicate glass and a ceramic glass;

forming a crystalline layer that comprises silicon on the first layer;

forming a sacrificial layer that comprises silicon dioxide, which is grown by applying a rapid thermal anneal process to oxidize part of the crystalline layer;
and

then removing the sacrificial layer.

5 (original): The method of claim 4 wherein the silicon dioxide layer is grown to a thickness of less than about 10 nanometers.

6 (original): The method of claim 5 wherein the silicon dioxide layer is removed using an isotropic etch process.

7 (original): The method of claim 6 wherein the portion of the crystalline layer that remains after the silicon dioxide layer is removed is at least about 2 nanometers thick.

Claims 8-9 (canceled)

Claim 10 (currently amended): ~~The method of claim 9 wherein the sacrificial layer comprises silicon dioxide, and further comprising:~~

A method for making a mirror for photolithography comprising:

polishing and cleaning a the low CTE layer that comprises a low CTE glass or a low CTE alloy that is selected from the group consisting of a titanium silicate glass and a ceramic glass; prior to

forming a the silicon containing layer on the low CTE layer; and

applying a rapid thermal anneal process to grow the silicon dioxide layer convert part of the silicon containing layer into a sacrificial layer that comprises silicon dioxide;

removing the sacrificial layer; and then

forming a multi-layer coating on the remaining portion of the silicon containing layer.

11 (original): The method of claim 10 further comprising growing the silicon dioxide layer to a thickness of less than about 10 nanometers.

12 (original): The method of claim 11 wherein the silicon dioxide layer is removed using an isotropic etch process.

13 (original): The method of claim 12 wherein the multi-layer coating comprises alternating layers of molybdenum and silicon.

Claims 14-15 (canceled)

Claim 16 (currently amended): ~~The method of claim 15 further comprising:~~

A method for making a mirror for photolithography comprising:

polishing and cleaning a the low CTE layer that comprises a low CTE glass or a low CTE alloy that is selected from the group consisting of a titanium silicate glass and a ceramic glass; prior to

forming a the silicon containing layer on the low CTE layer;

oxidizing the silicon containing layer to form a sacrificial silicon dioxide layer by applying a rapid thermal anneal process to grow a silicon dioxide layer that is less than about 10 nanometers thick; and

removing the silicon dioxide layer using an isotropic etch process; and

then

forming on the remaining portion of the silicon containing layer a multi-layer coating that comprises alternating layers of molybdenum and silicon.